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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,171	05/24/2001	Sheng Sun	005332/DISPLAY/AKT/BG	4583
32588	7590	10/03/2003	EXAMINER	
APPLIED MATERIALS, INC. 2881 SCOTT BLVD. M/S 2061 SANTA CLARA, CA 95050			MARKOFF, ALEXANDER	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/866,171

Applicant(s)

SUN, SHENG

Examiner

Alexander Markoff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1-5, 7-14, 16, 17, 20, 23-26, 28-34, 36, 37, 39, 42-45, 47-53, 55, 56, 58, 65 and 68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-5, 7-14, 16, 17, 23-26, 28-34, 36, 37, 42-45, 47-53, 55, and 56 are indefinite because the term "high power density" is a relative term.

Claims 4, 13, 20, 25, 33, 39, 44, 52, 58, 65 and 68 are indefinite because the chemicals formulas included in the claims are not conventional chemicals formulas.

Claims 65 and 68 are indefinite because the boundaries of the term "the other applicable gases are undefined.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 61- 68 are rejected under 35 U.S.C. 102(b) as being anticipated by

Engelsberg (US Patent No 5,821,175).

Engelsberg teaches a method as claimed.

See entire document, especially figures 19 and 20 and the related description and columns 10 and 14.

It is noted that recalculation of the laser parameters disclosed in column 14, lines 33-38 shows that energy density of the disclosed laser applied to the specified spot is inside of the claimed region.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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7. Claims 1-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal (any of US Patents No 6,095,085; 6,153,529; and 6,576,564) in view of the prior art admitted by the applicants in the specification (pages 1-4).

Agarwal teaches a method for conducting any plasma-enhanced process (including cleaning) with assistance of lasers. The laser light is applied to remote section and/or to the reaction chamber.

Agarwal teaches the use of UV light, which is inside of the claimed range of wavelength.

Agarwal teaches the use of the light to assist in activation of the same gases as claimed (C_3F_8).

Agarwal does not specifically teach a cleaning of the chamber.

However, the applicants admitted that cleaning plasma processing chambers by reactive plasma of the claimed fluorine containing gases was conventional in the art.

Having the teachings of Agarwal and the admitted prior art It would have been obvious to an ordinary artisan at the time the invention was made to clean the chamber of Agarwal by in-situ plasma cleaning with reactive gases with generating and sustaining the plasma by a method disclosed by Agarwal with reasonable expectation of adequate results in order to have the chamber cleaned.

As to the power limitation: Agarwal does not explicitly disclose the power of the lasers. However, since Agarwal discloses activation of the same gases as claimed it is reasonably believed that the power, which is used by Agarwal is the same as claimed.

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In alternative: the applied power is a result effective variable, thereby it would have been obvious to an ordinary artisan to find an optimum power in the modified method of Agarwal by routine experimentation in order to enhance the process.


Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 6,178,973; 6,098,637; 6,150,265 and 5,531,857.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Markoff whose telephone number is 703-308-7545. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P Gulakowski can be reached on 703-308-4333.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703--308-0651.



Alexander Markoff
Primary Examiner
Art Unit 1746

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ALEXANDER MARKOFF
PRIMARY EXAMINER